

Steps to Graphing a Rational Function

#1. Factor both the numerator and the denominator, but don't reduce yet.	$f(x) = \frac{\quad}{\quad}$ $= \frac{\quad}{\quad}$
#2. Note the domain restriction(s).	$x \neq$
#3. Reduce the expression.	$= \frac{\quad}{\quad}$
#4. Find the vertical asymptotes.	V.A.: $x =$
#5. Find the holes.	hole(s) at $(\quad , \quad), (\quad , \quad), (\quad , \quad)$
#6. Find the horizontal asymptote or the oblique asymptote, sometimes called the slant asymptote.	H.A.: $y =$ or O.A.: $y = \quad x +$
#7. Find the intersection with either the horizontal or oblique asymptote.	Intersection(s) with H.A. or O.A. at $(\quad , \quad), (\quad , \quad), (\quad , \quad)$
#8. Find the x-intercepts.	x-int.=
#9. Find the y-intercept.	y-int.=
#10. Draw the graph. Plot any additional points as needed to either make sure you have at least 1 point per section of the graph, or to help you see where the location of the graph. Remember to graph all asymptotes as dashed lines.	